

(12) UK Patent Application (19) GB (11) 2 366 234 (13) A

(43) Date of A Publication 06.03.2002

(21) Application No 0021152.4

(22) Date of Filing 30.08.2000

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(51) INT CL⁷
B23D 51/10 , B27B 21/04

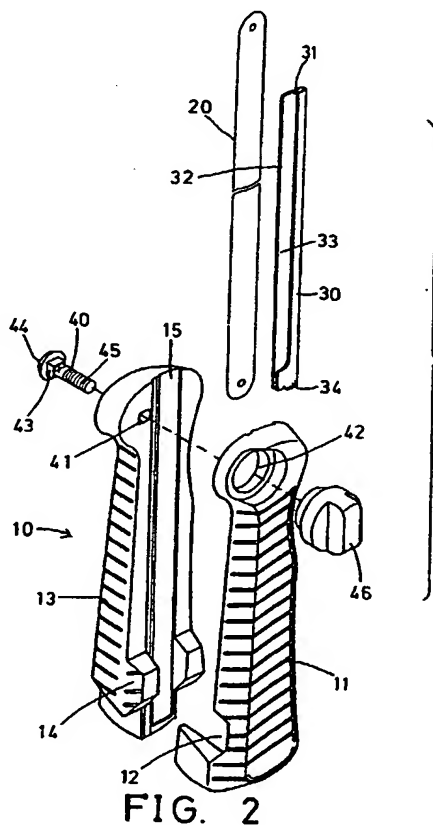
(52) UK CL (Edition T)
B5L LGB L104
B4K KSB

(56) Documents Cited
US 4651425 A

(58) Field of Search
UK CL (Edition S) B4B B130N , B4K KSB , B5L LGA
LGB LGX LMA LMB
INT CL⁷ B23D 49/10 49/11 51/00 51/01 51/02 51/10
51/16 , B26B 1/08 1/10 , B27B 21/00 21/02 21/04
Online: WPI, EPODOC, JAPIO

(54) Abstract Title
A retractable saw

(57) A retractable saw comprises a saw blade 20 slidably received within a handle 10. The saw blade is engaged with a protective member 30 for reinforcing the saw blade, which is slidably received in a groove 15 of the handle, and extendible outward of the handle. Means for securing the saw blade to the handle are also provided, for instance via fastener 40. Preferably the protective member is provided with a projection 34 which limits its movement to between two stops (18, fig 4) inside the handle.



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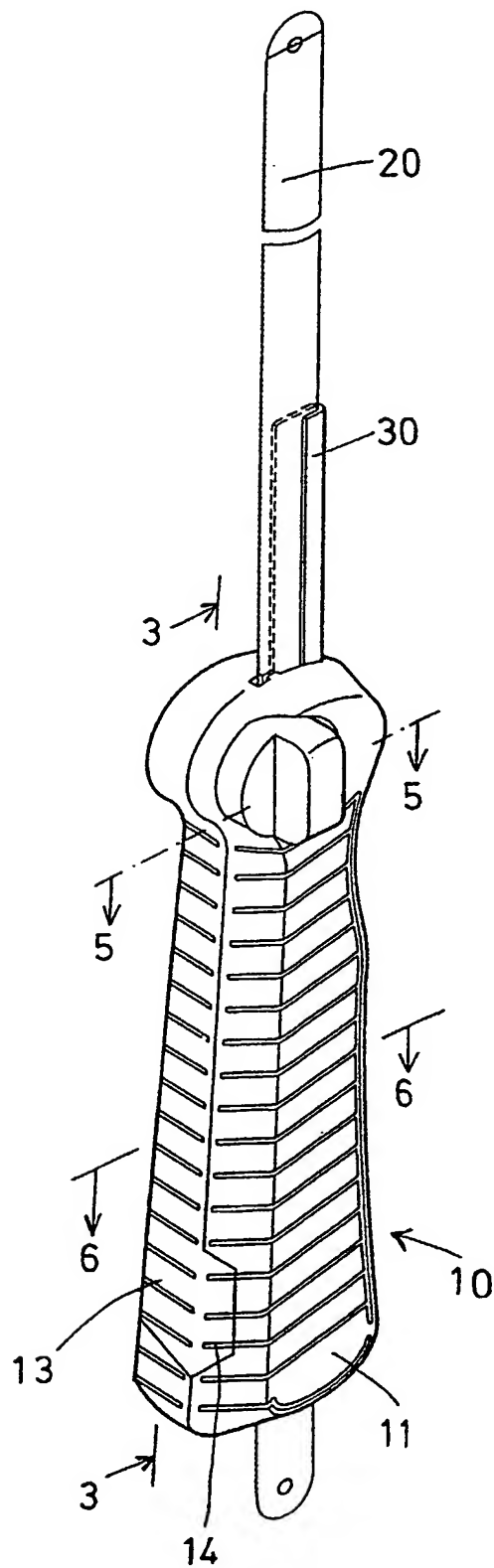


FIG. 1

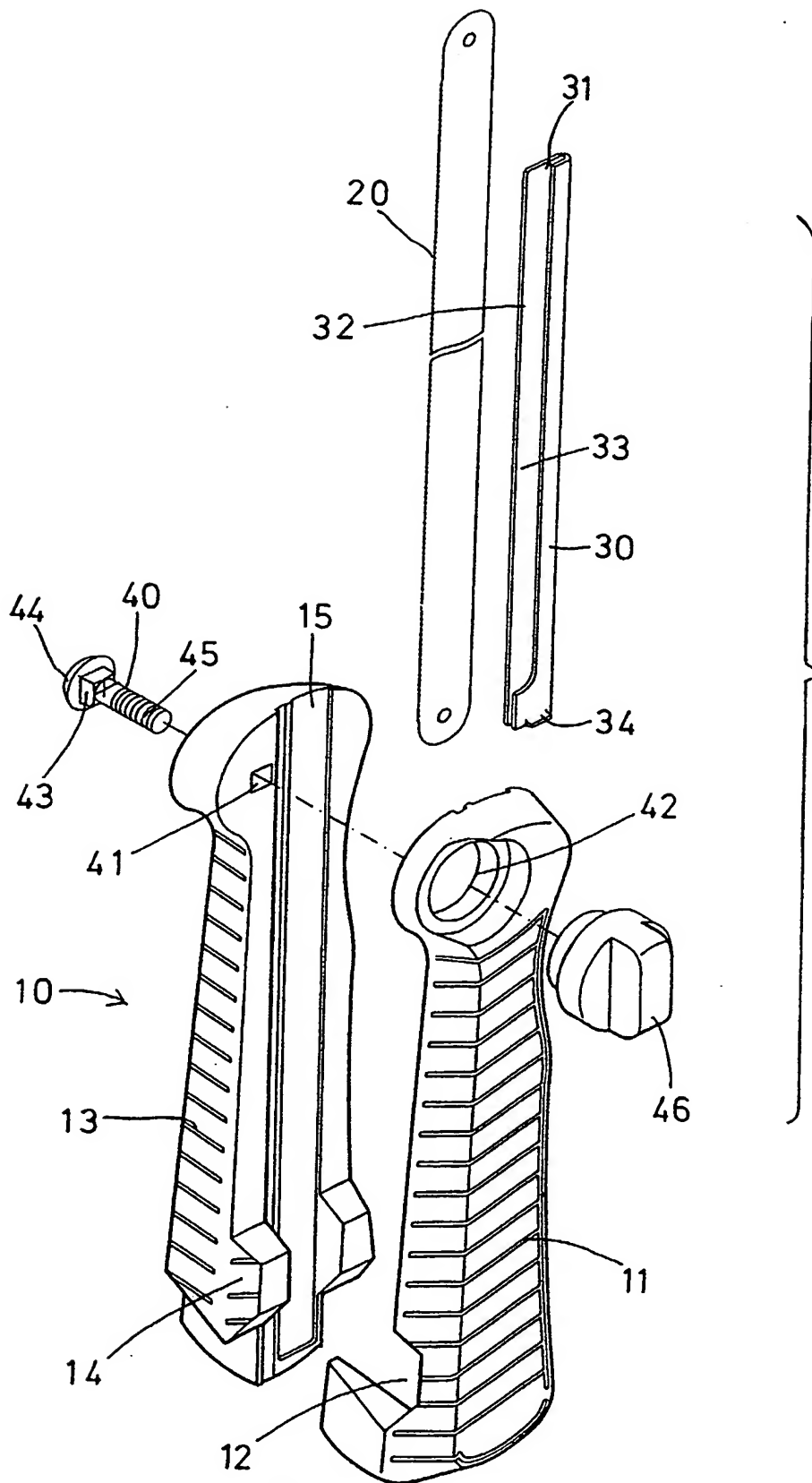


FIG. 2

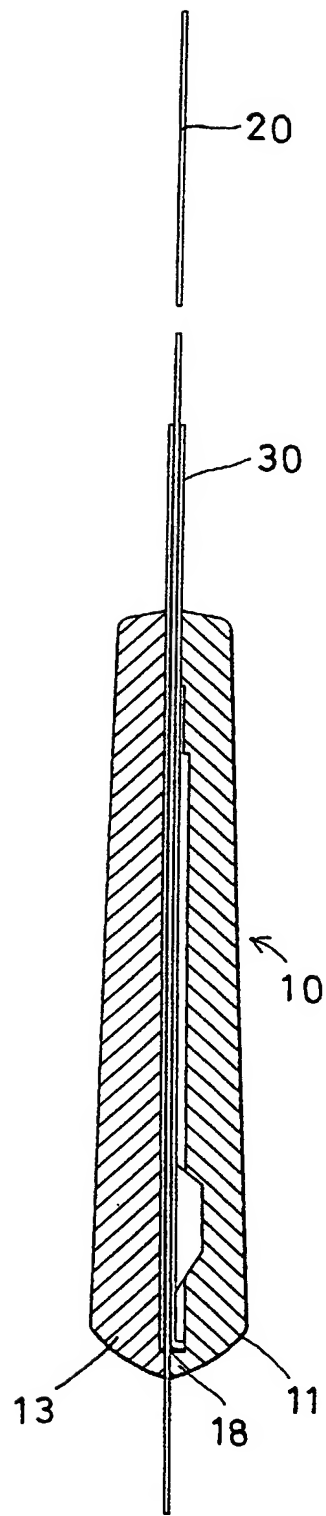


FIG. 3

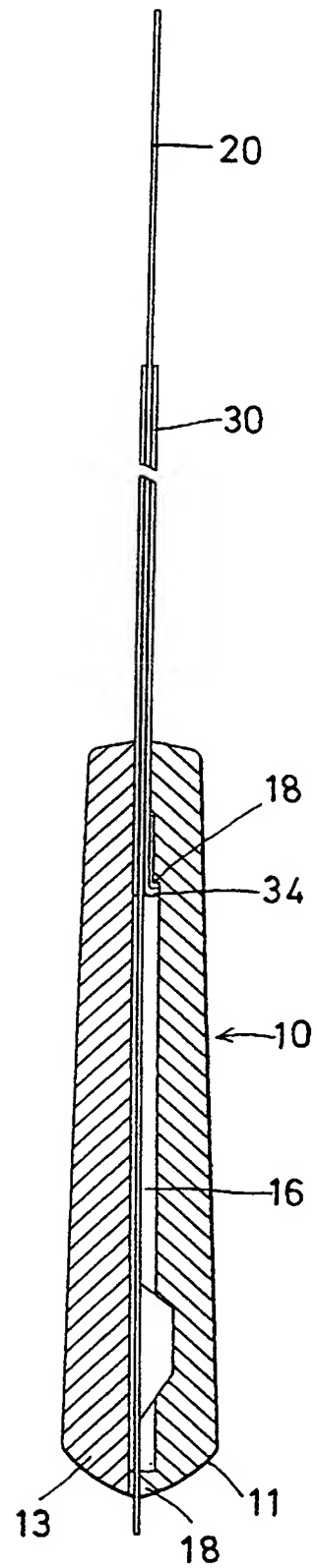


FIG. 4

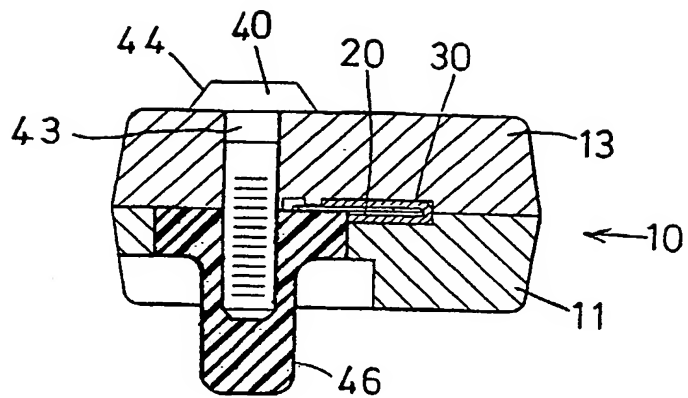


FIG. 5

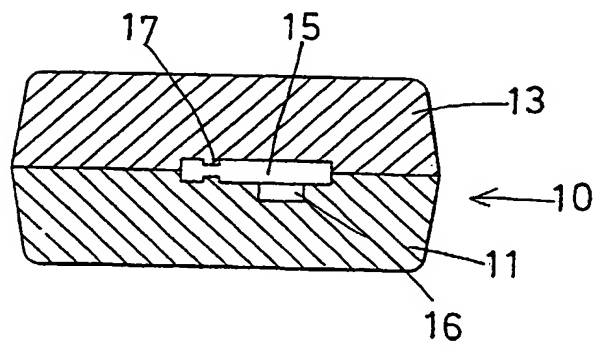


FIG. 7

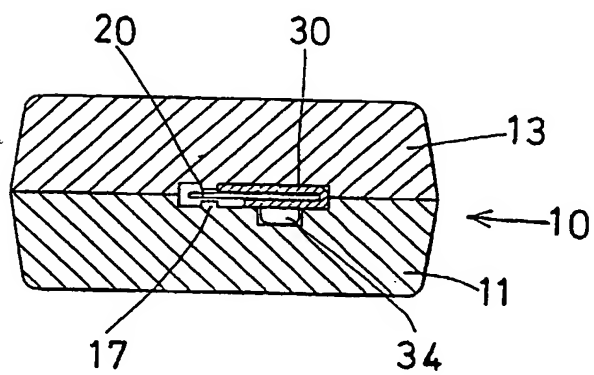


FIG. 6

RETRACTABLE SAW HAVING PROTECTIVE MEMBER

The invention relates to a retractable saw having a protective member for protecting the saw blade.

Typical saws comprise a saw blade slidably
05 received in a handle and extendible outward of the handle for sawing purposes. The saw blade may be easily bent and damaged when the saw blade is extended outward of the handle.

It is accordingly an object of the present
10 invention to provide a retractable saw having a protective member for protecting the saw blade and for preventing the saw blade from being bent or damaged.

According to the present invention there is provided a retractable saw comprising:-

- 15 a) a handle including a groove formed therein,
- b) a saw blade slidably received in the groove of the handle and extendible outward of the handle,
- c) a protective member slidably received in the groove of the handle and extendible outward of the
20 handle, the protective member being engaged with the saw blade for reinforcing the saw blade and for preventing the saw blade from being easily bent or damaged, and
- d) means for securing the saw blade to the
25 handle.

The protective member includes a pair of walls for defining a channel between the wall and for receiving

the saw blade. A first wall of the walls includes a notch formed therein for receiving a lock nut which may engage with the saw blade for securing the saw blade to the handle.

05 The securing means includes a fastener engaged through the handle, and a nut threaded with the fastener and engaged with the saw blade for securing the saw blade to the handle. A device is provided for preventing the fastener from rotating relative to the
10 handle and includes a non-circular orifice formed in the handle, the fastener includes a non-circular block formed thereon and engaged in the orifice of the handle for preventing the fastener from rotating relative to the handle.

15 The handle includes a pair of handle members each having a first end and a second end, the securing means includes a fastener engaged through the first ends of the handle members for securing the first ends of the handle members together. A first handle member includes
20 a notch formed in the second end thereof, a second handle member includes a latch extended from the second end thereof and engaged into the notch of the first handle member for securing the second ends of the handle members together.

25 The handle includes at least one bulge extended inward of the groove thereof and engaged with the saw blade for stably retaining the saw blade to the handle.

A device is provided for preventing the protective member from being disengaged from the handle and includes a projection extended from the protective member, the handle includes at least one stop provided
05 therein for engaging with the projection and for preventing the protective member from being disengaged from the handle. The handle includes a slot formed therein for slidably receiving the projection of the protective member, the stop of the handle is extended
10 inward of the slot of the handle for engaging with the projection of the protective member.

In the drawings:-

FIG. 1 is a perspective view of a retractable saw;

FIG. 2 is an exploded view of the retractable saw;

15 FIG. 3 is a cross sectional view taken along lines 3-3 of FIG. 1;

FIG. 4 is a cross sectional view similar to FIG. 3, illustrating the operation of the retractable saw; FIGS. 5 and 6 are cross sectional views taken along
20 lines 5-5, and 6-6 of FIG. 1 respectively; and

FIG. 7 is a cross sectional view similar to FIG. 6, illustrating the inner structure of the handle of the retractable saw, in which the saw blade and the protective member have been removed from the handle.

25 Referring to FIGS. 1-5, a retractable saw comprises a handle 10 which may include an integral one-piece structure or which may include two handle

members 11, 13 secured together by such as the fasteners or by welding processes. One end of one of the handle members 11 may include a notch 12 for receiving a latch 14 of the other handle member 13 and
05 for locking the one ends of the handle members 11, 13 together. The other ends of the handle members 11, 13 may be secured together with a fastener 40 which will be discussed hereinafter. The handle 10 includes a groove 15 for slidably receiving a saw blade 20. The
10 groove 15 may be formed in either or both of the handle members 11, 13, best shown in FIGS. 5-7. The saw blade 20 may include either one or both of the ends extendible outward of the handle 10.

A protective member 30 is also slidably received
15 in the groove 15 of the handle 10 and includes a channel 31 formed between a pair of walls 32 for slidably receiving the saw blade 20, best shown in FIGS. 3-6. It is preferable that one of the walls 32 includes a notch 33 and a projection 34. The handle 10
20 includes a slot 16 (FIGS. 4, 7) formed in such as one of the handle members 11, 13, for slidably receiving the projection 34 of the protective member 30 (FIG. 6). The handle 10 includes one or more stops 18 (FIG. 4) extended inward of the slot 16 thereof for engaging
25 with the projection 34 of the protective member 30 and for limiting the protective member 30 to slide relative to the handle 10 and for preventing the protective

member 30 from being disengaged from the handle 10. The handle 10 may include one or more bulges 17 extended inward of the groove 15 thereof for engaging with the saw blade 20 and for stably retaining the saw blade 20 within the groove 15 of the handle 10.

A fastener 40 is engaged through a square or non-circular orifice 41 of the handle member 13 and through an opening 42 of the other handle member 11, and includes a square or non-circular block 43 formed on one end thereof and engaged in the square or non-circular orifice 41 of the handle member 13 for preventing the fastener 40 from rotating relative to the handle 10. The fastener 40 includes a head 44 engaged with the handle 10, particularly the handle member 13, and includes a threaded portion or an outer thread 45 for threading with a nut 46. The nut 46 may engage into the opening 42 of the handle 10 and may engage with the saw blade 20 and/or the protective member 30 for securing the saw blade 20 and the protective member 30 to the handle 10 (FIG. 5).

As best shown in FIG. 5, the nut 46 is engaged with the saw blade 20 and is forced against the saw blade 20 and the protective member 30 for securing the saw blade 20 and the protective member 30 to the handle 10. The formation of the notch 33 in one of the walls 32 is provided for allowing the nut 46 to engage with the saw blade 20. However, without the notch 33 of the

wall 32, the saw blade 20 may be solidly secured to or adjustably secured to the protective member 30, and the fastener 40 and the nut 46 may be used to secure the protective member 30 and thus the saw blade 20 to the
05 handle 10. Or, the nut 46 may be used to secure the saw blade 20 to the handle 10 without securing the protective member 30 to the handle 10. The protective member 30 may be forced fitted in the groove 15 of the handle 10 and may be moved and adjusted relative to the
10 handle 10 according to the outward extension of the saw blade 20 relative to the handle 10. The protective member 30 may include a single wall 32 engaged with the saw blade 20 for reinforcing the portion of the saw blade 20 that is extended outward of the handle 10.

15 In operation, as shown in FIGS. 1, 3 and 4, the protective member 30 may be adjusted relative to the handle 10 and may be used for partially receiving the saw blade 20. The saw blade 20 has a portion extended outward of the protective member 30 for sawing
20 purposes. The other portion of the saw blade 20 that will not be used for sawing purposes may be received and protected in the protective member 30, such that the saw blade 20 may be reinforced and may be prevented from being easily bent during sawing operation.

CLAIMS:-

1. A retractable saw comprising:

a) a handle including a groove formed therein,

05 b) a saw blade slidably received in the groove of the handle and extendible outward of the handle,

c) a protective member slidably received in the groove of the handle and extendible outward of the handle, the protective member being engaged with the saw blade for reinforcing the saw blade, and

10 d) means for securing the saw blade to the handle.

2. A retractable saw as claimed in claim 1, wherein the protective member includes a pair of walls for defining a channel between the wall and for receiving the saw blade.

15 3. A retractable saw as claimed in claim 2, wherein a first wall of the walls includes a notch formed therein.

4. A retractable saw as claimed in claim 1, wherein the securing means includes a fastener engaged
20 through the handle, and a nut threaded with the fastener and engaged with the saw blade for securing the saw blade to the handle.

5. A retractable saw as claimed in claim 4 further comprising means for preventing the fastener from
25 rotating relative to the handle.

6. A retractable saw as claimed in claim 5, wherein the rotation preventing means includes a non-

circular orifice formed in the handle, the fastener includes a non-circular block formed thereon and engaged in the orifice of the handle for preventing the fastener from rotating relative to the handle.

05 7. A retractable saw as claimed in claim 1, wherein the handle includes a pair of handle members each having a first end and a second end, the securing means includes a fastener engaged through the first ends of the handle members for securing the first ends
10 of the handle members together.

 8. A retractable saw as claimed in claim 7, wherein a first handle member includes a notch formed in the second end thereof, a second handle member includes a latch extended from the second end thereof
15 and engaged into the notch of the first handle member for securing the second ends of the handle members together.

 9. A retractable saw as claimed in claim 1, wherein the handle includes at least one bulge extended
20 inward of the groove thereof and engaged with the saw blade for stably retaining the saw blade to the handle.

 10. A retractable saw as claimed in claim 1 further comprising means for preventing the protective member from being disengaged from the handle.

25 11. A retractable saw as claimed in claim 10, wherein the disengaging preventing means includes a projection extended from the protective member, the

handle includes at least one stop provided therein for engaging with the projection and for preventing the protective member from being disengaged from the handle.

05 12. A retractable saw as claimed in claim 11,
wherein the handle includes a slot formed therein for
slidably receiving the projection of the protective
member, the stop of the handle is extended inward of
the slot of the handle for engaging with the projection
10 of the protective member.

 13. The retractable saw substantially as herein
described with reference to the accompanying drawings.